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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,078	07/06/2001	Sashiro Uemura	96790P370	5843

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EXAMINER
BERCK, KENNETH A

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/900,078	Applicant(s) UEMURA ET AL.	
	Examiner Ken A Berck	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with th correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2003* .

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *9 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4 and 8* is/are rejected.

7)☒ Claim(s) *2,3 and 5-7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claims 6-7 are objected to because of the following informalities: The appropriate units are not listed throughout the claim. Regarding claim 6, lines 4-5, it is assumed that the appropriate units are nanometers and micrometers for examination. Regarding claim 7, line 6, it is assumed that the appropriate units are micrometers for examination. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Nakamoto (US 6097138).

Regarding claim 1, Nakamoto discloses (figs 6d, 10b) a flat display with a substrate (12), a field emission type electron-emitting source (fig 6d) mounted on the substrate, a front glass member (72) opposing the substrate through a vacuum space and having light transmittance at least partially, an electron extracting electrode (153) with an electron passing hole and set away from the emitting source, a phosphor film (78), a plate-like metal member (28) with a large number of through holes (fig 6d) and a

coating film formed of nanotubes that cover a surface of the metal member and inner walls of the through holes.

Regarding claim 8, Nakamoto discloses (fig 4c) the metal member has the through holes in a matrix shape to form a grid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamoto (US 6097138) in view of Ando (US 6541900).

Regarding claim 4, Nakamoto discloses all of the above claim limitations but fails to clearly point out using frit glass.

Ando discloses (column 5, lines 35-45) using frit glass in order to hermetically adhere the parts to the substrate.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the display of Nakamoto using frit glass in order to hermetically adhere the parts to the substrate, as taught by Ando.

Regarding claim 5, Nakamoto discloses all of the above claim limitations and the nanotubes being made of carbon (abstract).

Nakamoto fails to clearly point out using iron or an iron-containing alloy in the metal member of the electron-emitting source and the nanotubes being adapted to cover the metal member in a curled state.

Ando discloses using iron or an iron-containing alloy in the metal member of the electron-emitting source in order to reduce costs (column 5, lines 31-45).

Ando fails to clearly point out the nanotubes being adapted to cover the metal member in a curled state.

The recitation that an element is "adapted to" perform a function is not a positive limitation and does not constitute a limitation in any patentable sense.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to us the display of Nakamoto with the iron or an iron-containing alloy in the metal member of the electron-emitting source in order to reduce costs, as taught by Ando.

Regarding claim 6, Nakamoto discloses the nanotube fibers have a thickness of not less than 10 nm and less than 1um and a length of not less than 1 nm and less than 100 um (column 13, lines 42-53).

Allowable Subject Matter

Claims 2-3, 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the prior art of record neither shows nor suggests a flat display with a field emission type electron-emitting source comprising a plate-like metal member with a large number of through holes and serving as a growth nucleus for nanotube fibers and a coating film formed of nanotubes that cover a surface of the metal member and inner walls of the through holes and a plurality of band-like electron-emitting sources arranged parallel to each other with the electron extracting electrode being a plurality of band-like extracting electrodes arranged in a direction perpendicular to the emitting sources and the phosphor film being a plurality of band-like films, in combination with other claim limitations.

Jin et al. (US 6250984) discloses a nanotube field emitter structure with nanotubes protruding from a supporting base material, but fails to disclose a plate-like metal member with a large number of through holes and serving as a growth nucleus for nanotube fibers and a coating film formed of nanotubes that cover a surface of the metal member and inner walls of the through holes. (US 6522055, from the current applicant) discloses a substrate being made of a material containing a metal serving as a growth nucleus for nanotube fibers with a plurality of through holes.

Regarding claim 3, dependence on a prior claim and the reasons stated above.

Regarding claim 7, the prior art of record neither shows nor suggests a flat display with a field emission type electron-emitting source comprising a plate-like metal member with a large number of through holes and serving as a growth nucleus for nanotube fibers and a coating film formed of nanotubes that cover a surface of the metal member and inner walls of the through holes, the metal member being made of

iron or iron-containing alloy and the nanaotubes being adapted to cover the metal member in a curled state, the metal member having a thickness of 0.05 mm to 0.20 mm and the coating film covers the surface of the metal member and the inner walls of the through holes to a thickness of 10 to 30 um, in combination with other claim limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken A Berck whose telephone number is (703)305-7984. The examiner can normally be reached on Mon-Fri 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703)305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Joseph Williams
Joseph Williams

kab